4. Each dose delivered to the infiltrative surface of the drainfield should not exceed 20% of the estimated average daily wastewater flow. If the total dose volume is too small, then the pipe network will not become fully pressurized or may not be pressurized for a significant portion of the total dosing cycle and may need to be adjusted.

4.19.3.4 Dosing Chamber

Dosing chambers are tanks that contain a pump or siphon and their associated equipment. The dosing chamber is either a separate septic tank located after the septic tank or may be the last compartment of a multi-compartment septic tank. If the dosing chamber is part of a multi-compartment septic tank, it must be hydraulically isolated from the compartment(s) of the tank that comprise the septic tank portion of the tank. The construction of a dosing chamber shall meet the requirements of IDAPA 58.01.03.007 except as specified herein. Figure 4-20 provides a dosing chamber diagram with a pump and screen, and Figure 4-21 provides a dosing chamber diagram with a pump vault unit. –

1. Dosing chambers must be listed on the approved list of dosing chambers (section 5.3), or must be listed on the approved list of septic tanks (section 5.2).

~~1.~~2. Pump vaults and effluent filters must be listed on the approved list of pump vaults (Section 5.8), or must be listed on the approved list of septic tank effluent filters (Section 5.9).

~~2.~~3. Any system using a pump located after the septic tank to deliver effluent to the drainfield (pressurized or nonpressurized) or a nonpackaged alternative pretreatment component shall locate the pump in a dosing chamber meeting the minimum requirements herein.

~~3.~~4. Dosing chamber must be watertight, with all joints sealed. Precautions must be made in high ground water areas to prevent the tank from floating.

~~4.~~5. Effluent must be screened or filtered prior to the pump.

a. A screen constructed of non-corrosive material must be installed to protect the pump with a minimum of ⅛" holes or slits and have a minimum screening flow area of 4 ft^2 for non-engineered applications. ~~The fFilter flow area requirements for engineered systems should meet the screen cleaning interval requirements outlined in the system operation & maintenance manual.~~

~~a. screen must be placed around the pump with 1/8 inch holes or slits of noncorrosive material and have a minimum area of 12 ft^2.~~

b. Screen placement must not interfere with the floats and should be easily removable for cleaning.

c. An effluent screen or filter placed in the septic tank may be used a~~ts~~ a suitable alternative to pump screens, and must be constructed with ⅛" or smaller holes or slits of non-corrosive material and include a flow area appropriate to provide a rated mean-time between screen cleanings of 4 years or more based on system design flow or have a screening flow area of at least 1 ft^2 in non-engineered systems unless the filter has a close-off feature that prevents effluent from being discharged to the drainfield when the filter is removed. If placed in the septic tank, then a riser to finish grade is ~~requir~~needed to provide easy access for

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cleaning. ~~The f~~All screens must be installed according to manufacturer's recommendations.

d. The filter flow area for engineered systems should meet screen cleaning interval outlined in the system operation & maintenance manual.

e. Any effluent filter used in a septic tank in place of conventional outlet piping, shall conform to the liquid draw requirements listed under IDAPA 58.01.03.007.11.d. which is 40% of tank liquid volume in vertical walled tanks, and 35% on horizontal cylindrical tanks.

~~c. An effluent filter placed on the outlet of the septic tank, designed with a closing mechanism when the filter is removed, is a suitable alternative to screens around pumps. An access riser to grade should be installed over the septic tank outlet manhole to provide access to the filter for maintenance.~~

6. The volume of the dosing chamber should be equal to at least two times the system design flow when a single pump is used.

~~b.~~a. If duplex pumps are used, the volume of the dosing chamber may be reduced to equal the system design flow. The dosing chamber must come from the approved septic tank or dosing chamber list.

~~c.~~b. The volume of the dosing chamber must be sufficient enough to keep the pump covered with effluent, deliver an adequate dose based on the system design, and store 1 day of design flow above the high-level alarm.

~~d.~~c. Additional dosing chamber capacity may be necessary if the pressurized system is designed to have surge capacity.

~~5.~~7. The dosing chamber manhole located above the pump shall be brought to grade using a rise. Access to the pumps, controls, and screen is necessary.

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6.8. A high-level audio and visual alarm float switch shall be located within the dosing chamber 2–3 inches above the pump-on level to indicate when the level of effluent in the dosing chamber is higher than the height of the volume of one dose.

7.9. A low-level shutoff float switch shall be connected to the pump and be set to a height that is 2–3 inches above the top of the pump. This ensures the pump remains submerged.

8.10. If a differential control float is used to turn the pump on and off, care must be exercised to ensure the float will effectively deal with the required dose based on the inches of drop in the dosing chamber.

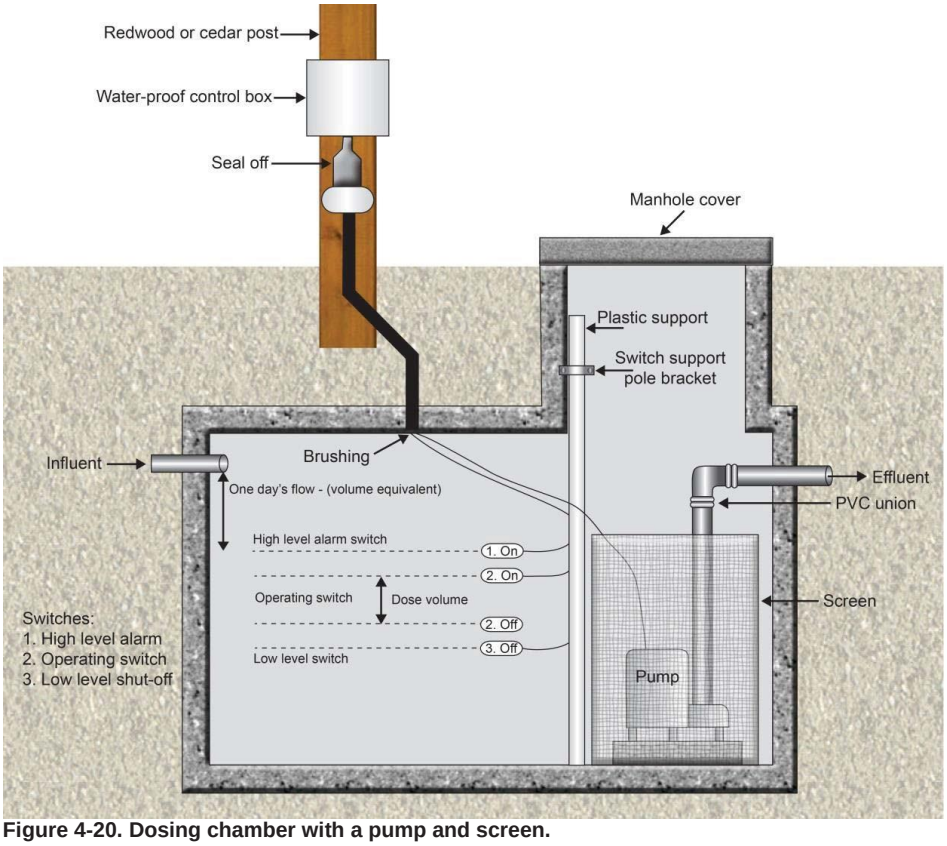

Figure 4-20. Dosing chamber with a pump and screen.

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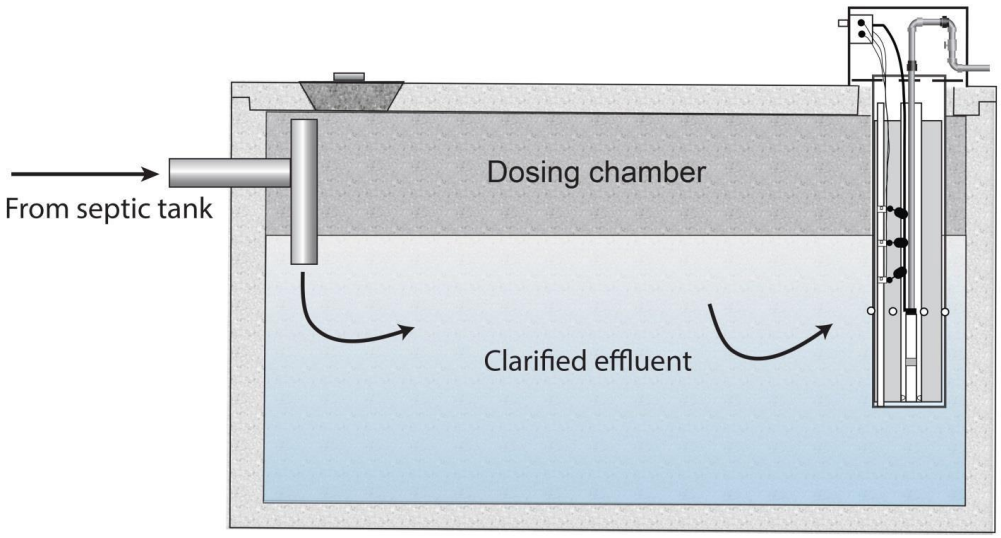

Figure 4-21. Dosing chamber with a pump vault unit.

~~7.~~11. Dosing chamber electrical requirements:

a. All electrical system designs and installations must be approved by the Idaho Division of Building Safety, Electrical Division.

b. Electrical permits are required for installing all electrical components and the applicant, responsible contractor, and/or the responsible charge engineer are responsible for obtaining the proper electrical permits.

c. Installation of all electrical connections is required to be performed by a licensed electrician. The applicant, responsible contractor, and/or the responsible charge engineer are responsible for ensuring that the installation is performed by a properly licensed individual.

d. Subsurface sewage disposal installer registration permits are not a substitute for an electrical installer license.

e. Visual and audible alarms should be connected to a separate circuit from the pump. It is recommended that a DC battery backup power source be considered for the visual and audible alarm.

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4.19.3.5 In-Tank Pumps

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Placement of sewage effluent pumps in a septic tank is an acceptable practice under the following conditions:

~~1.~~5. The site is too small for the installation of a dosing chamber or a septic tank with a segregated dosing chamber compartment, or the flows are less than 100 GPD.

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~~2.~~6. Sewage effluent pumps must be placed in an approved pump vault (section 5.8).

~~3.~~7. Effluent drawdown from the septic tank is limited to a maximum 120 gallons per dose with a maximum pump rate of 30 GPM.